**Amendments to the Drawings:**

The drawing sheets attached in connection with the above-identified application containing Figures 1, 4, 7, 14, 18 and 20 are being presented as a new formal drawing sheet or sheets to be substituted for the previously submitted drawing sheet or sheets. All drawing Figures have been amended. Appended to this amendment is an annotated copy of the previous drawing sheet which has been marked to show changes presented in the replacement sheet of the drawing.

**REMARKS**

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 4, 7, 9, 10, 11, 23, 25 and 29 are currently being amended.

Claims 22 is being cancelled.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-21 and 23-31 are now pending in this application.

Objections to the Drawings

The drawings were objected to for certain informalities. Applicant has submitted herewith new formal drawing sheets to be substituted for previously submitted drawing sheets. With respect to the objections to Figure 1, Applicant respectfully notes that reference character "16" is mentioned in the specification in paragraph [0006].

Objections to the Specification

The disclosure was objected to for certain informalities. Applicant has amended the specification to correct the informalities.

Claim Objections

The Examiner objected to claims 1, 4, 7, 9-11, 22-23, 25 and 29 for certain informalities. Claims 4, 7, 9, 10, 11, 23, 25 and 29 have been amended to overcome these objections. As to the Examiner's objection to the "grammatically awkward" claim structure of "accumulating ... into,"

Applicant respectfully disagrees with this objection. As is apparently understood by the Examiner in the "Response to Arguments" section, and as is well known in the art, a buffer can accumulate data. One of ordinary skill in the art would clearly understand the scope of the invention as recited in claim 1. Accordingly, Applicant respectfully requests this objection to be withdrawn.

Claim Rejections under 35 U.S.C. § 112 ¶ 1

The Examiner rejected claims 3, 4, 6, 12-15 and 19-29 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. Applicant respectfully traverses this rejection for the following reasons.

Regarding claim 3, Examiner has indicated that the "description of Figures 7, 10 and 13 does not mention how a demodulation operation is 'defined' by the accumulator." In addition, the Examiner has stated that how the accumulation step provides this defined operation is not described. Applicant notes that the objected claim language, when read in context, would be apparent to one skilled in the art. For instance, one skilled in the art would understand that the accumulating step may define the demodulation operation because, as recited in claim 1, accumulating the correlated component into the second memory element provides a particular correlated multi-path element from the signal (e.g., demodulation), for example. In addition, "using information from the signal to determine the amount of demodulation processing" would be clear to one skilled in the art as describing, for example, that the amount of correlated components would determine the amount of processing necessary.

The Examiner rejected claim 4, as alleging that the determination step varying based on the processing unit is not sufficiently described. Applicant notes that the claim recites that a determination "varies dynamically between processing units." This claim language is fully supported by the written description in, for example, paragraphs [0042]-[0046].

Examiner rejected claims 6 and 15, alleging that a step recited in these claims is not provided within the detailed description. Applicant directs the Examiner's attention to

paragraphs [0058]-[0065] of the specification. It would be obvious to one skilled in the art from the description how these steps are incorporated. In addition, the Examiner rejected claim 12, alleging that the "detailed description does not appear to describe how to search for multi-path components by correlating against a timing hypothesis." Applicant directs the Examiner's attention to paragraphs [0048]-[0049] for an exemplary description of this feature.

The Examiner rejected claim 13, alleging that the additional limitations of the claim interfacing with the elements of claim 7 are not described. Applicant traverses this rejection, because it would be clear to one skilled in the art that the plurality of buffers in claim 7 is further defined and limited within claim 13, which specifically shows how these elements are interfaced. Applicant respectfully directs the Examiner's attention to paragraph [0080] of the present specification. Further, claim 13 recites a further limitation that there are "separate sets of physical buffers for even and odd digital samples."

With regards to the Examiner's rejection of claim 14, it should be obvious to one skilled in the art that, as is recited within claim 14, the permutation block is selected by providing both "correct timing of digital samples to the demodulator" and "the searching element with the other set of samples." Further, the claim does not provide that timing affects the permutation block, as that is clearly not what is stated. However, what is provided in claim 14 is that when the correct timing of one sample set provided by one of the separate physical buffers is sent to the demodulator and the other sample set provided by another separate physical buffer is sent to the searching element, the permutation block is selected and utilized. If one were to read the entire contextual content of claim 13 on which this claim depends, this would be obvious to one skilled in the art to have this meaning. In addition, Applicant directs the Examiner's attention to paragraph [0080]-[0082] and Figure 16 where these features are fully described.

As to claim 19, the Examiner alleges that there is no description of a means for dynamically switching to optimal functionality. Applicant respectfully directs the Examiner to paragraph [0042] and paragraphs [0070]-[0074] of the present specification. The detailed

description provides the dynamic functionality based on the weighting elements through the extensive description of the processor relative to these elements, for example.

Claim 20 was rejected because the detailed description allegedly does not describe a despreader "adaptable to arbitrary sample rates and symbol time." Applicant directs the Examiner's attention to paragraph [0064] of the detailed description. Applicant notes that it would be clear to one skilled in the art that in a conventional despreader, which is not run on a clock, the inconsistency of the input would not affect the functionality of the despreader itself.

The Examiner rejected claim 21 alleging that the limitation recited in claim 21 is not sufficiently described within the detailed description. Applicant respectfully disagrees with this rejection, and directs the Examiner's attention to paragraph 64. One of ordinary skill in the art would clearly understand the scope of claim 21 in light of this description.

Applicant respectfully requests these rejections to be withdrawn.

Claim Rejections under 35 U.S.C. § 112 ¶ 2

Claims 3, 4, 6, 7-19, 24-25, 30-31 were rejected under 35 U.S.C. § 112 ¶ 2 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant respectfully disagrees.

First, in rejecting claim 3, the Examiner alleges that it is unclear as to what "amount of demodulator processing to be performed." Applicant believes that, when reading this claim language in light of the detailed description of the present invention, the scope and meaning of the claim is clear to one skilled in the art. For example, the Examiner is directed to paragraph [0054]-[0055] and Figure 6.

The Examiner rejected claims 4 and 6 for having insufficient antecedent. These claims has been amended to more clearly recites the invention.

The Examiner further claims 6 and 15, alleging that it is unclear to which memory element the digital samples are to be buffered. These claims have been amended to more clearly recite the invention. Examiner alleges that it is unclear "whether the searching and channel estimation based on the samples in the first memory element are referring to digital samples tuned at the original or non-original RF frequency." Applicant asserts that as would be clearly understood by one skilled in the art, if the samples are already stored within the first memory element, as is provided within the claim, then the samples being discussed and "operated on" (or processed) at non-original frequencies are not those that are located within that element as they cannot be operated on while also being stored.

Next, the Examiner rejected claim 7 for improper functionality of an element. Applicant disagrees and believes that the Examiner has misinterpreted the claim. As is provided within the claim, the accumulator "accumulate[s] energy" occurs within the buffers not as a function of the despreader. Further, the Examiner has rejected claim 7 for "insufficient antecedent basis" of "the despread energy." This claim has been amended to overcome this rejection. The Examiner further rejects this claim due to alleged inconsistency with the detailed description. Applicant respectfully disagrees. Both the weighting element and the accumulator may process the same signal, as one is utilized to operate on, (i.e. weight) the signal energy and the other is utilized to store (i.e. accumulate) the signal energy into a buffer. A is provided within claim 7, the weighting element weights the despread energy of a symbol, or signal, for a particular multi-path component, whereas the accumulator accumulates, providing two completely separate functionalities.

The Examiner rejected claim 12, alleging that "against timing hypothesis" is unclear. Correlation of signals is time dependent, due to the fact that they are processed and located in different locations of the apparatus at different times. As a result, claim 12 provides that the circuitry within the apparatus attempts to locate and correlate these multi-path components based on a hypothesis, such as an algorithm which is formulated with various factors, of where they will be at specific times, hence "timing hypothesis."

Examiner rejected claims 13 and 19 for reasons similar to those stated under the 35 U.S.C. § 112 ¶ 1 rejections. Applicant refers to the previously made arguments regarding these rejections.

With regards to claim 24, Applicant believes it would be sufficiently clear to one skilled in the art that "partially processed," as recited in claim 24, includes not completely processed. In the present invention, as recited in independent claim 20, from which claim 24 depends, a symbol that may be further processed and utilized at a later time after being collected into a first buffer and despread by the despreader is recited.

The Examiner rejected claim 25 as allegedly being unclear as to which limitations it applies. Applicant directs the Examiner's attention to paragraphs [0042]-[0048] in the specification. In light of this description, Applicant believes the claim is sufficiently clear.

Next, the Examiner rejected claim 30 as allegedly being unclear. Applicant notes that the demodulating occurs based on processing a CDMA waveform asynchronously through application of a sample rate associated with that waveform. Further, this processing occurs based on programmed instructions. This is clearly provided within the claim limitations of claim 30.

The Examiner rejected claim 31, alleging that it is unclear which steps in the process are done asynchronously. Again, as is clearly stated within the claim itself, "the entire demodulating processing is done asynchronously." (underling added). If any step is considered part of the demodulating process, then this step may be done asynchronously as is stated within the claim.

In view of the above arguments, Applicant believes that the aforementioned claims distinctly claim subject matter provided within the present invention. Accordingly, Applicant respectfully requests that these rejections under 35 U.S.C. § 112 ¶ 2 be withdrawn.

Claim Rejections under 35 U.S.C. § 102

The Examiner rejected claims 1, 2, 30 and 31 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Number 6,985,516 to Easton (hereinafter "Easton"). Applicant respectfully traverses this rejection for at least the following reasons.

Embodiments of the present invention relate to an improved method of demodulating multi-path signals with a virtual finger method and apparatus for processing digital communication signals common circuitry for both transmit and receive operations in a digital communication system. Independent claim 1 recites a "method for demodulation of a composite signal containing a plurality of multi-path components" that comprises "buffering digital samples of a signal into a first memory element" and "randomly accessing the digital samples from the first memory element to correlate a multi-path component from the signal."

In response to Applicant's arguments, Examiner cites Easton as teaching these features in elements 224, 522, 524 and 234, as well as at column 14, lines 4-40 and column 16, lines 19-29. However, Easton fails to teach or suggest at least this feature of the pending claims. Applicant respectfully disagrees with this interpretation of Easton.

As recited in claim 1 of the present application, the samples are buffered in a first memory element. To the contrary, Easton discloses segments of samples are so buffered. In addition, Easton fails to teach or suggest the randomly accessing digital samples, as recited in claim 1.

As noted by the Examiner, Easton discloses a detailed system as to how these samples are retrieved and processed. For instance, Easton discloses that "a particular segment of samples can be retrieved from the buffer and processed." Easton, column 14, lines 4-5. Easton further disclose that the segments are limitedly chosen based on the coherency during a period of time. In addition, Easton discloses another option for accessing the samples, where they are sequentially retrieved based on time offset of the segments stored within the buffer. (See Easton, col. 14, lines 26-40). Easton fails to teach or suggest the above-noted features of the pending claims.

Claim Rejections under 35 U.S.C. § 103

The Examiner has rejected claims 5, 7-10, 19-20 and 22-26 under 35 U.S.C. § 103 (a) as being unpatentable over U.S. Patent Number 7,035,318 in the name of Taniguchi *et al.* (hereinafter "Taniguchi") further in view of U.S. Publication No. 2003/0235238 in the name of Schlem *et al.* (hereinafter "Schlem"). The Examiner has rejected claim 6 over Easton in view of Taniguchi and further in view of U.S. Patent No. 6,748,010 in the name of Butler *et al.* (hereinafter "Butler"). The Examiner rejected claims 11 and 29 under 35 U.S.C. § 103 (a) as being unpatentable over Taniguchi in view Schlem and further in view of U.S. Publication No. 2001/0036195 in the name of Garyantes *et al.* (hereinafter "Garyantes"). The Examiner rejected claims 15-16 under 35 U.S.C. § 103 (a) as being unpatentable over Taniguchi in view Schlem and further in view of Butler. The Examiner rejected claims 17 and 28 under 35 U.S.C. § 103 (a) as being unpatentable over Taniguchi in view Schlem and further in view of Easton. The Examiner rejected claims 18 under 35 U.S.C. § 103 (a) as being unpatentable over Taniguchi in view Schlem and further in view of U.S. Publication No. 2003/0128678 in the name of Subrahmanya *et al.* (hereinafter "Subrahmanya"). Finally, The Examiner rejected claim 28 under 35 U.S.C. § 103 (a) as being unpatentable over Taniguchi in view Schlem and further in view of Subrahmanya and Easton. Applicant respectfully disagrees.

In rejecting claims 7 and 20, the Examiner acknowledges that Taniguchi "does not teach a weighting element." Office Action, page 15. Instead, the Examiner relies on Schlem as disclosing this feature at paragraph [0056]. Applicant respectfully notes that the cited portion of Schlem, while disclosing the use of channel estimates are utilized, fails tot each or suggest the weighting of the despread energy. As recited in independent claim 7, the claimed apparatus includes "a weighting element that weights despread energy ...." Schlem fails to teach or suggest this at either the portion cited by the Examiner or anywhere else in the disclosure.

Since none of the cited referencees teach or suggest at least this feature of claim 7, claim 7 is patentable. Claims 5-6, 8-11, 15-19, 22-26 and 28-29 each depend, either directly on

indirectly, from one of allowable claims 1, 7 and 20, and are, therefore, patentable for at least that reason, as well as for other patentable features when those claims are considered as a whole.

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date FEBRUARY 27, 2009

By _____

FOLEY & LARDNER LLP
Customer Number: 30542
Telephone: (858) 847-6735
Facsimile: (858) 792-6773

G. Peter Albert Jr.
Attorney for Applicant
Registration No. 37,268

ANNOTATED SHEET



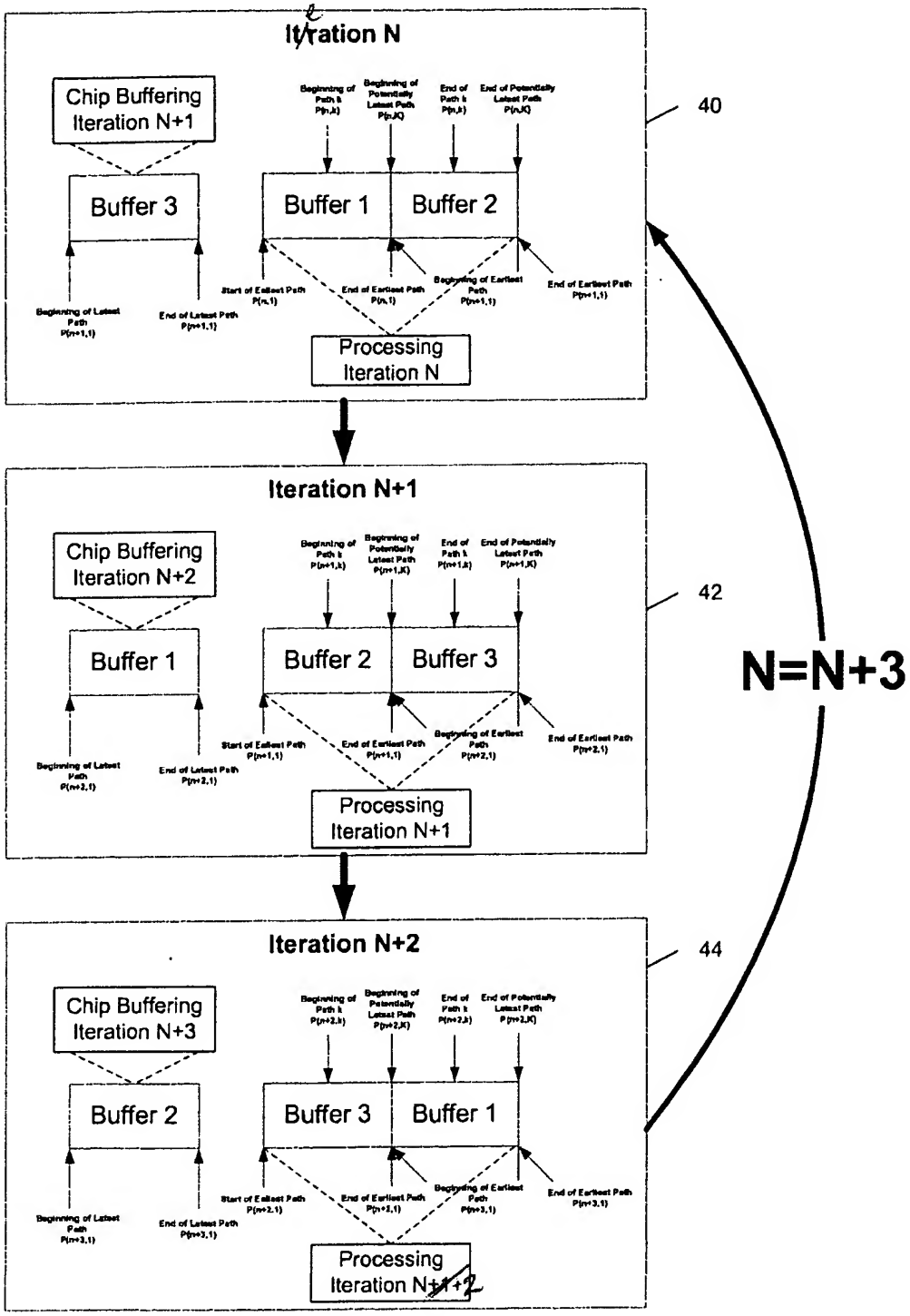


FIGURE 4

ANNOTATED SHEET



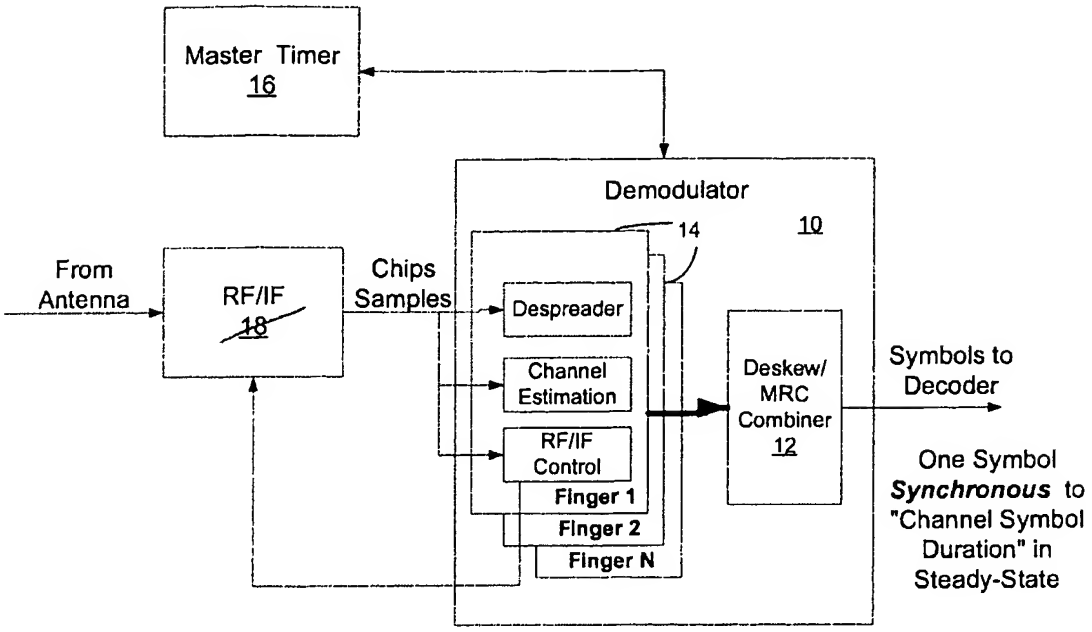


FIGURE 1
PRIOR ART

ANNOTATED SHEET



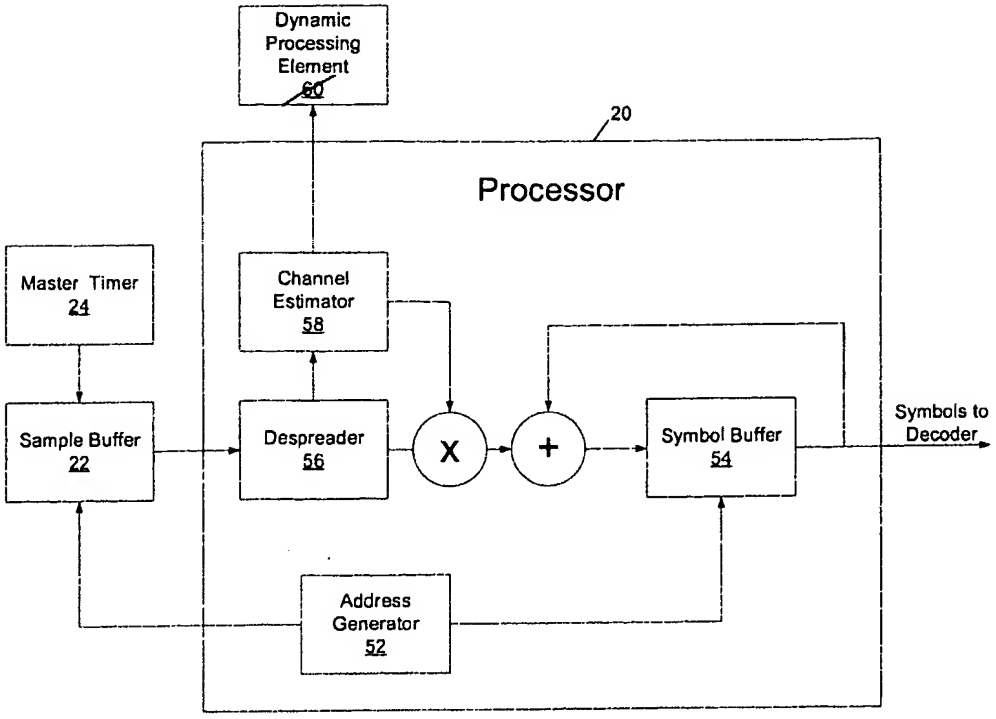


FIGURE 7

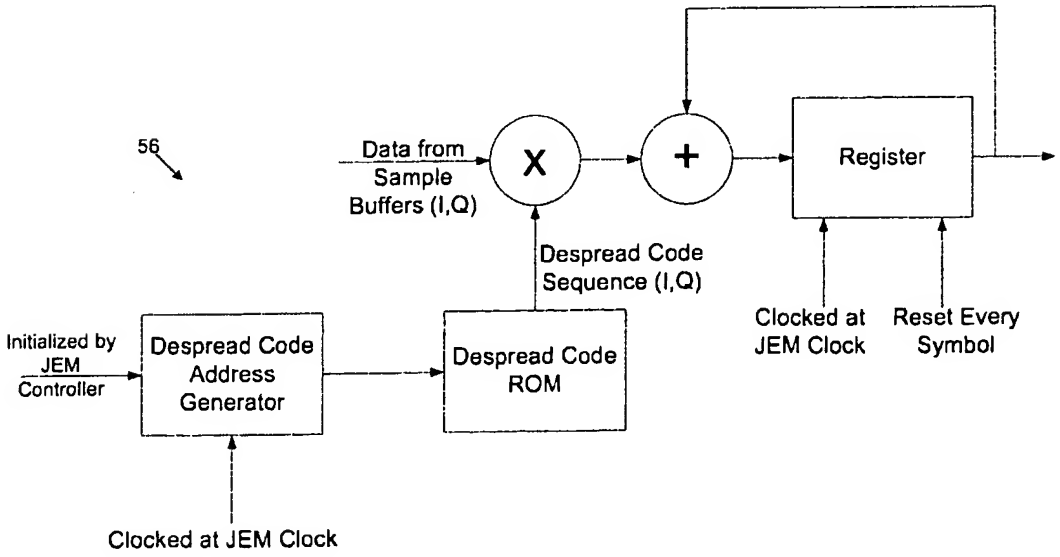


FIGURE 8

ANNOTATED SHEET



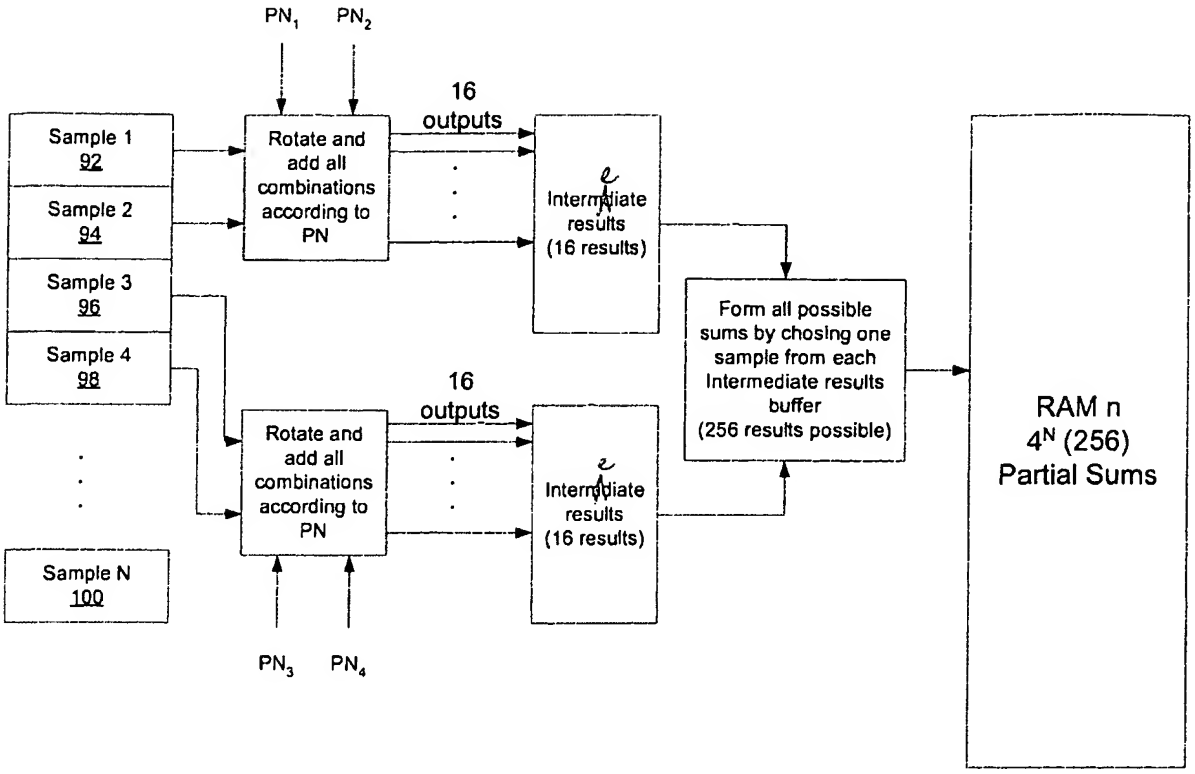


FIGURE 14

ANNOTATED SHEET



$$R = 4\left(\frac{E_c}{N_o}\right)\left[\frac{1}{\sqrt{E_c}}\right]$$

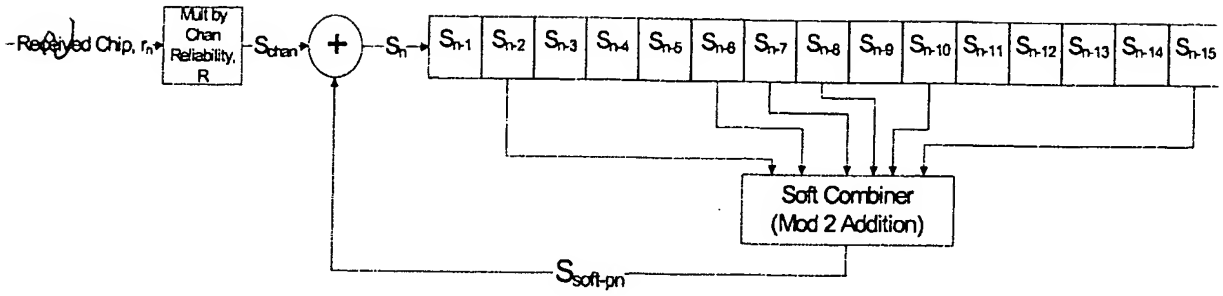


FIGURE 18

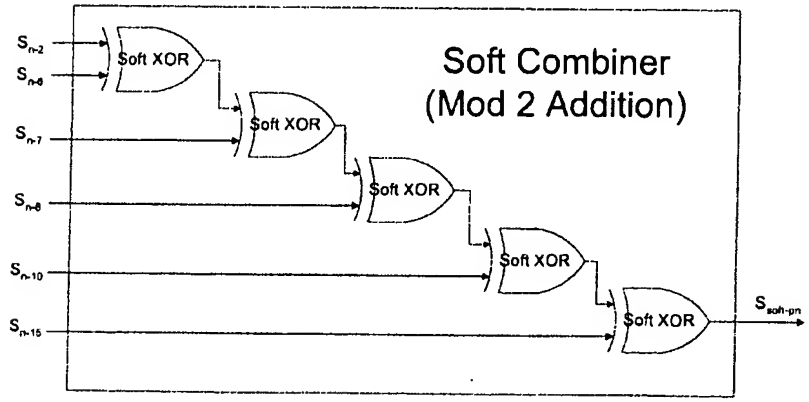


FIGURE 19